



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/987,436      | 11/14/2001  | W. Don Morison       | 115354.00106        | 6759             |

27557 7590 04/07/2004

BLANK ROME LLP  
600 NEW HAMPSHIRE AVENUE, N.W.  
WASHINGTON, DC 20037

|          |
|----------|
| EXAMINER |
|----------|

MOONEY, MICHAEL P

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2877

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/987,436 | <b>Applicant(s)</b><br>MORISON ET AL. |  |
|                              | <b>Examiner</b><br>Michael P. Mooney | <b>Art Unit</b><br>2877               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Prior arguments are moot in light of the following new grounds for rejection.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belk (5698848) and further in view of Berthold et al. (6289143).**

Belk teaches a lead fiber having a first end with a connector for connecting the lead fiber to an interferometric demodulation instrument and a second end with a partially reflecting surface. (figure 1; Abstract; col. 2 lines 45-50).

Belk teaches a sensor fiber having a first end with a partially reflective surface and a second end with a partially reflective surface. Furthermore, although Belk does not explicitly teach the exact phrase "the sensor fiber having an optical path length which varies in accordance with the change in displacement" it would have been

obvious to do so because it is notoriously well known (NWK) that strain affects the optical path length which varies in accordance with the change in displacement. (figure 1; Abstract; col. 2 lines 45-50).

Belk does not explicitly teach a “first ferrule” and a “second ferrule”, and a sleeve for connecting the second end of the lead fiber to the second end of the sensor fiber so as to leave a gap between the partially reflecting surfaces of the first and second ferrules.

Berthold et al., however, does teach a “first ferrule” and a “second ferrule”, and a sleeve for connecting the second end of the lead fiber to the second end of the sensor fiber so as to leave a gap between the partially reflecting surfaces of the first and second ferrules. (figure 1).

Belk and Berthold et al. are combined by taking the technology of Berthold et al. which teaches a “first ferrule” and a “second ferrule”, and a sleeve for connecting the second end of the lead fiber to the second end of the sensor fiber so as to leave a gap between the partially reflecting surfaces of the first and second ferrules and applying it to the technology of Belk to obtain the instant invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make such a combination for the purpose of better performance in hostile environments.

Thus claim 1 is rejected.

Claims 5-6 are taught by Belk at, e.g., col. 6 lines 55-60. Thus claims 5-6 are rejected.

Art Unit: 2877

By the above reasons, references and Belk/Berthold combination, each and every element of claims 2-4, 7-10 are also rejected.


By the above reasons, references, the Belk/Berthold combination, and the fact that it is notoriously well known that at least one of pre-buckling, buckling, cracks, leaks, or creep is/are detectable via strain detected by an invention such as in Belk/Berthold. Thus claim 11 is rejected.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

  
Michael P. Mooney  
Examiner  
Art Unit 2877

FGF/mpm  
4/5/04

For: Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2877



Andrew Lee